

## Abstract

A method and workstation for optimizing optimization of biocatalyst performance based on combinatorial chemistry, automation technology, and computer-controlled design is disclosed. The workstation includes a synthesizer, an analyzer, a robot and computer in communication with the synthesizer and analyzer. The computer includes one or more programs for regulating reaction parameters such as types of enzymes; amounts of enzymes; types of solvents/buffers; amounts of solvents/buffers; temperature; pressure; pH; types of substrates; time; enzyme – substrate ratio; and agitation (whether to agitate and the speed of agitation) and employs statistical methods for optimizing multiple reaction parameters and for designing optimized experiments for further investigation.